



Current work on Svalbardflora.net and Red Listed Species



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Last updated:
Minuartia stricta

18.03.2009

Trisetum spicatum ssp. *spicatum*

05.02.2009

Carex lidii

04.02.2009

Carex maritima

04.02.2009

Deschampsia sukatschewii ssp. *borealis*

www.svalbardflora.net

The Flora of Svalbard

Photo © Bjørn Erik Sandbakk

Prins Karls Forland - 20. juli 2003

Vascular plants native in Svalbard and some introduced species.



Polemonium boreale
Photo: © Geir Arnesen

The vascular flora of Svalbard consists of about 165 native species, which is a rather high number for an archipelago so far to the north. We here present record maps of the vascular plants native in Svalbard and some introduced species.

The data are mainly compiled from the herbaria of the University Museums in Oslo, Tromsø, Trondheim and Bergen. The actual distribution may be wider as populations of some species might have been overlooked and

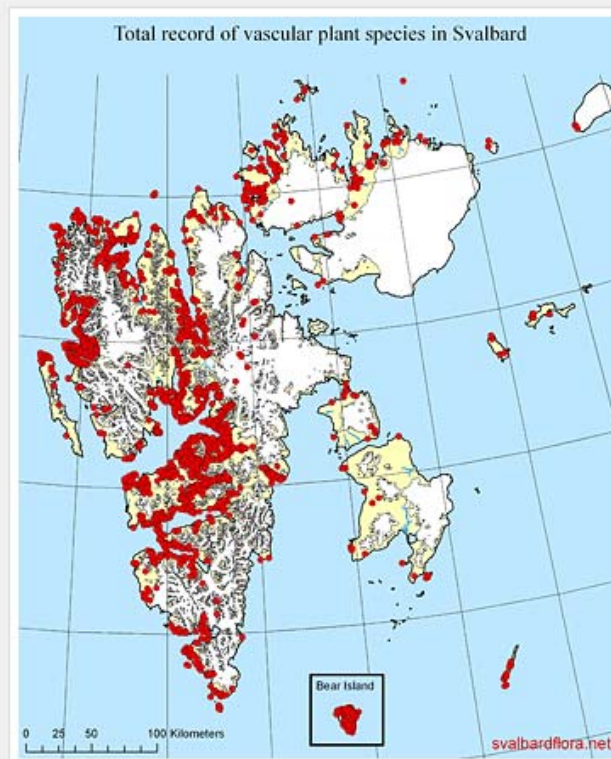
typically common species are not always recorded.

We miss photos of many species and appreciate help from you. In the future, a key for determination of species as well as a short description of the species will come.

Read more about The Flora of Svalbard [here](#).



Salix polaris
Photo: © Bjørn Erik Sandbakk



News and Messages:

23.09.2008

The work on the florakey has started

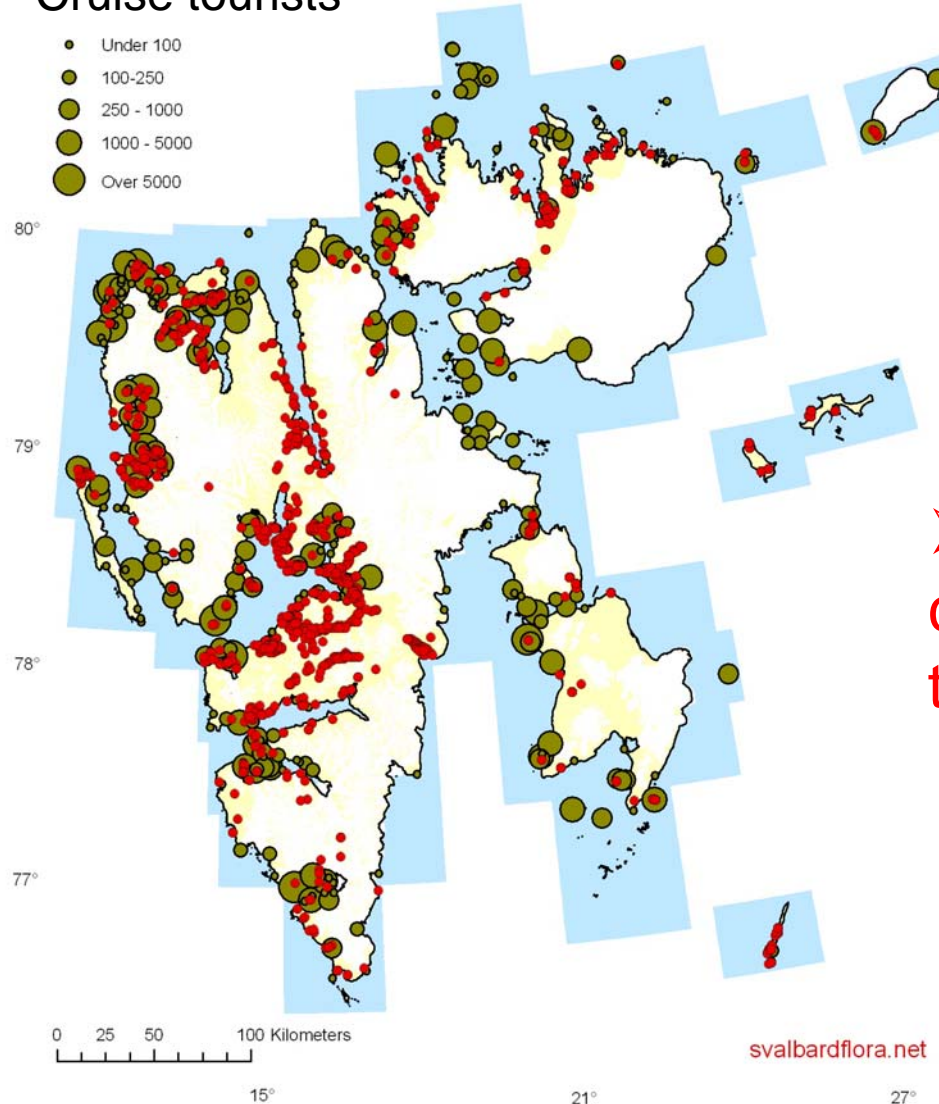


Redlisted species in Svalbard

- 51 (54) of 165 species on the red list:
 - 17 Critically endangered (CR)
 - 9 Endangered (EN)
 - 11 Vulnerable (VU)
 - 15 Near threatened (NT)
 - 2 No data (DD)
- Regional red list



Cruise tourists



● Occurrence of redlisted species

➤ Potential conflict with tourism



Types of redlisted species

- Warmth demanding species
- High arctic species that are rare throughout their distribution range
- Species where taxonomic studies are needed



1. Hot springs



1. Hot springs

- 8 redlisted species
 - *Arenaria humifusa*
 - *Botrychium boreale*
 - *Botrychium lunaria*
 - *Carex capillaris*
 - *Euphrasia wettsteinii*
 - *Puccinellia angustata* ssp. *palibinii*
 - *Sibbaldia procumbens*
 - *Tofieldia pusilla*



1. Hot springs

- Estimate population sizes
- Investigate levels of genetic diversity
- Compare genetic diversity with reference populations
- Are the Svalbard populations viable?
- Are the Svalbard populations genetic distinct?



2. Five warmth demanding species



Campanula rotundifolia
ssp. *giesekiana*



Betula nana
ssp. *tundrarum*



Vaccinium uliginosum
ssp. *microphyllum*



Rubus chamaemorus



Euphrasia wettsteinii

We have knowledge on:

- Population sizes
- Genetic diversity
- Seeds and seedbank (three of them)

Alsos, Engelskjøn & Brochmann 2002. AAAR 34: 408-418.

Alsos, Spjelkavik & Engelskjøn 2003. Can. J. Bot. 81: 220-231.

Engelskjøn, Lund & Alsos 2003. Polar Research 22: 317-339.

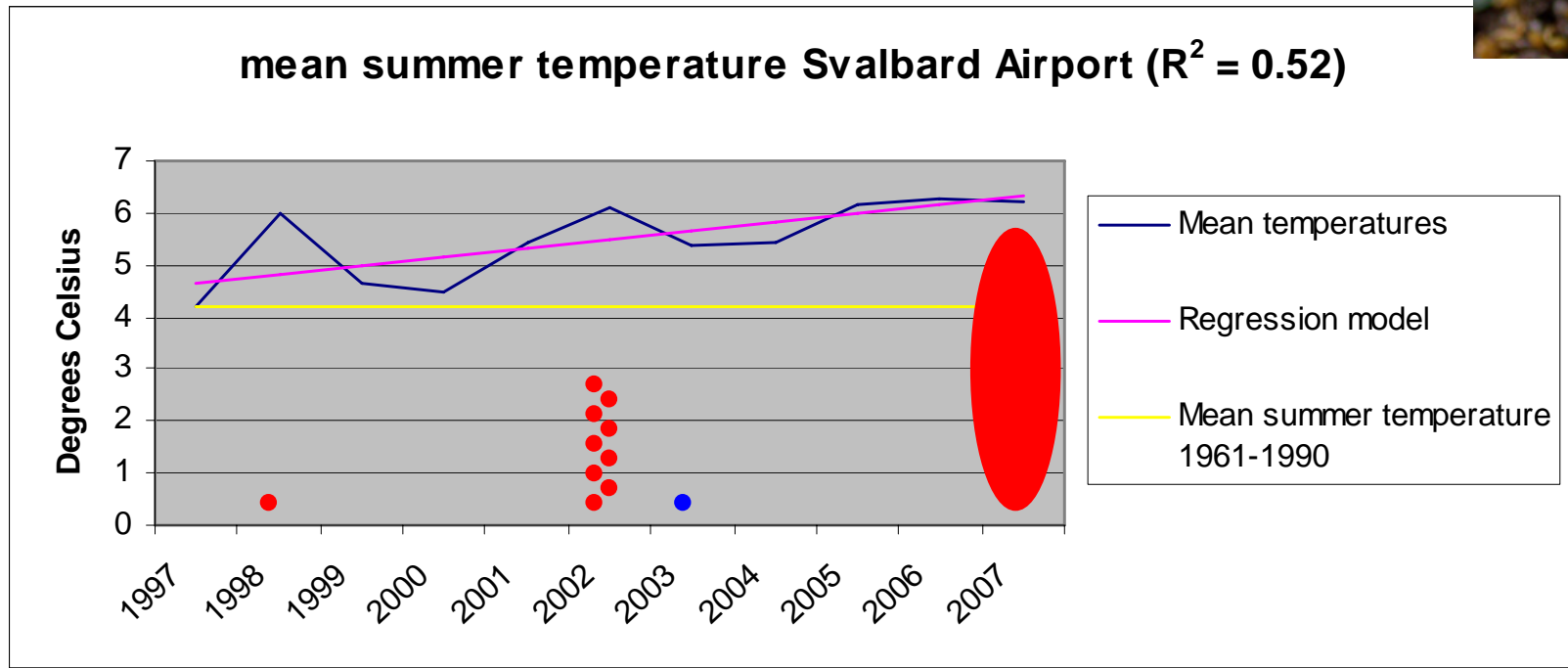
Eidesen et al. 2007. Mol. Ecol. 16: 3902-3925.

Alsos et al. 2007. Science 316: 1606-1609.

Ehrich et al. 2008. J. Biogeogr. 35: 801-814.

Gusarova et al. In Prep.

2. Is *Euphrasia* spreading in Svalbard?



Observed temperature increase on Svalbard 0.16K per year for the period 1997 to 2007

1 patch of *E. wettsteinii* at Colesdalen ● and Ossian Sars ●

Lange et al. 2007. In Alsos et al. 2007 UNIS publication series.

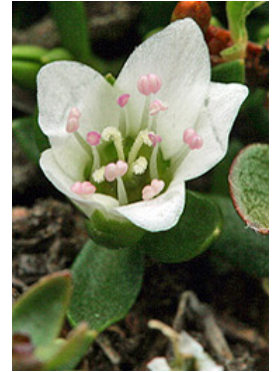
2. Monitoring warmth demanding species

- *Euphrasia wettsteinii* started 2008
- Others starts 2009
- Permanent plots
- Monitoring every 1-5 years
- Temperature and moisture loggers
- Camera document snow melt



3. Cold tolerant, amphi-Atlantic species

- PhD Kristine Westergaard
- *Arenaria humifusa*
- *Sagina cespitosa*
- AFLP variation throughout the distribution range



4. *Puccinellia* spp.

- *Puccinellia svalbardensis*
- Endemic
- Not on the redlist
- Grazed at one site
- Possible project:
 - Epidermis structure?
 - Liudmila Sergienko
 - AFLP?
- Not financed yet



No photo!

5. *Ex situ* conservation

- Svalbard Global Seed Vault
- 88 species, ½ million seeds
- 10 redlisted species
- Germination test spring 2009
- Tromsø Botanical Garden



Concluding remarks

- Some effort going on now
- Reference populations from Greenland and Russia needed
- How to monitor without leaving any markers?
- Are we prioritizing the right species?
- How can we protect arctic species against climate change?